ACEC-DOT BRIDGE SUBCOMMITTEE

Minutes of May 3, 2004 Meeting

Attendees:

Allen Raynor, NCDOT
Lonnie Brooks, NCDOT
Mark Pearson, Earth Tech (Co-Chair)
Chris Glass, McKim and Creed
Kevin Austin, BHME
David Ruggles, Stewart Engineering
Eddie Wetherill, Wetherill & Associates

I. LRFD Update

DOT has already converted the existing Prestressed Concrete Girder program to LRFD and is now in the process of adding precast box beams as an optional girder type.
DOT will be ordering the latest editions AASHTO LRFD manuals soon, but will order only a few copies due to the higher cost (about $430.00 each)
The DOT LRFD Implementation Team led by Allen Raynor will arrange a second meeting soon. Kevin Austin and Mark Pearson are working with the LRFD implementation team as the ACEC representatives.
DOT is trying to arrange for FHWA training in LRFD design of steel superstructures this summer, either in conjunction with Steel Bridge Forum or some other forum.

II. Upcoming Training Opportunities

NCDOT is arranging with AISI to hold a Steel Bridge Forum in Raleigh in July. The tentative topics include: LRFD Design procedures for Steel Superstructures, progress toward unification and simplification of the steel girder criteria covering both straight and curved girders; implementation of HPS 70 steel and the revised span-to-depth formulas; lateral flange top bracing for wind resistance; discussion on new applications of steel truss bridges as viable replacement alternatives for existing trusses in light of current steel technology; and others. Not much training or guidance materials are available for substructure design yet.

III. Upcoming Policy Changes

- **Steel vs. Concrete**: Until further notice, designers should utilized prestressed concrete superstructures wherever feasible. Use two-span, continuous-for-live-load bulb tees for grade separations where necessary. Steel costs have become problematic. For railroad crossings, use steel superstructures for lighter weight and, therefore, fewer crane restrictions. Concrete strengths of up to 8,000psi are going to be typical, with exceptions up to 10,000psi in some cases. 0.6 inch prestressing strand will also become more widely available for use in NC.
- **Approach Slabs** will all be 25 feet long (minimum) beginning with September Letting (some will be let in July). Ends will be perpendicular to the roadway for skew angles between 60 and 120 degrees inclusive. Others will be set to 60 or 120 degrees. Asphalt pavement on approach slabs has been eliminated. Barrier rail extends 12 feet onto the approach slab, then it transitions to special curb section.
- **Lump Sum Bridges**: DOT will soon let some small bridge replacements as Lump Sum Superstructure and Lump Sum Substructure, similar to Bridge Maintenance style contracts.
- **Concrete Box Beams**: DOT is introducing the routine use of precast, prestressed concrete box beams. The box beams will allow for longer spans for given depths and greater flexibility for using prestressed girders in grade separation structures.

IV. Design-Build

The tentative letting lists for design-build contracts are now posted on the DOT website at the following link:
http://www.doh.dot.state.nc.us/preconstruct/highway/dsn_srvc/contracts/design_build/

(There is an underline symbol "_" where spaces appear above.)

V. Joint Fall Conference

The Bridge Subcommittee is considering topics for the Joint Conference in October. The topics are on "context sensitive design" as it relates to bridge. Recent examples for which presentation materials may be available are the Hillsborough Street and Glenwood Avenue Bridges and the new pedestrian bridge over I-440. The Joint Conference committee chair should contact Greg Perfetti or Allen Raynor to follow up.

VI. New Members and Co-Chair for August meeting

Mark Pearson (’04) is rotating off of the Bridge Subcommittee after completing a three-year term and will be replaced by Tim Rountree (’07) of RWA. The vacant sixth ACEC seat on the committee will be filled by Tom Tallman (’07) of Wilbur Smith. Chris Glass (’05) of McKim & Creed has agreed to Co-Chair the subcommittee for the coming year. Congratulations to Chris. Continuing members of the subcommittee will be Eddie Wetherill (’05), Kevin Austin (’06) and David Ruggles (’06).

VII. Other

Status of Work: No further Design-Bid-Build (traditional) bridge projects are expected to be advertised this year. However, several design-build projects are anticipated.

Next Meeting is scheduled for 9:00 AM Monday August 2, 2004 in Structure Design Conference Room B.